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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/866,335  | 05/25/2001  | Philip P. Carvey     | 2390.2001-001       | 4858             |
| 21005   | 7590        | 10/28/2004           | EXAMINER            |                  |
| HAMILTON, BROOK, SMITH & REYNOLDS, P.C.<br>530 VIRGINIA ROAD<br>P.O. BOX 9133<br>CONCORD, MA 01742-9133 |             |                      | HO, DUC CHI         |                  |
|   |             | ART UNIT             | PAPER NUMBER        | 2665             |

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |
|------------------------------|------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                              | 09/866,335             | CARVEY, PHILIP P.   |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |
|                              | Duc C Ho               | 2665                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 25 May 2001.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-52 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 19-27 and 47-51 is/are allowed.
- 6) Claim(s) 1-18,28-46 and 52 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/5-25-01</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____.                                   |

***DETAILED ACTION***

***Claim Rejections - 35 USC § 112***

1. Claims 1-18, 28-46, and 52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the scope of the claim is impossible to ascertain due to the uncertainty as to how the components: "links", "source based virtual networks", and "egress based virtual networks" are related to each other? The same remark applies to claim 40.

Regarding claim 28, the scope of the claim is impossible to ascertain due to the uncertainty as to how the components: "links", "source based tunnel segments", and "egress based tunnel" are related to each other?

Regarding claim 52, the scope of the claim is impossible to ascertain due to the uncertainty as to how the components: "links", "source based tunnels", and "egress based tunnels" are related to each other?

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 9-18, 40-42, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Dally et al. (WO 99/11033- IDS record), hereinafter referred as Dally.

Regarding claim 1, Dally discloses a router with virtual channel allocation.

*routers interconnected by links ( see routers 40-fig.4, page 10, lines 3-13);*

*packets traversing one or more hops across links from packet sources to packet destinations ( packets traversing one or more hops across links between routers from a source routers to a destination routers, see fig. 4);*

*subtrees of the interconnected routers forming source based virtual networks for each of the packet sources (each of the interconnected routers in the first half vertically of the two dimension torus array in fig. 4 form a plurality of paths);*

*subtrees of the interconnected routers forming egress based virtual networks for each of the packet destinations (each of the interconnected routers in the second half vertically of the two dimension torus array in fig. 4 form a plurality of paths); and*

*a packet traversing a source based virtual network of a packet source, the packet transitioning into an egress based virtual network to the packet destination (a packet is traversing from a path originating from a source router, and merging into a path originating from a destination router).*

Regarding claim 2, a fabric router used in figure 4 comprises a plurality of buffers for implementing inputting and outputting the packet toward destination.

Regarding claim 3, each router in figure 1 comprises memory-fig. 11B for implementing set of queues, see page 22-line 6 to page 23-line 27.

Regarding claim 9, the source router and destination router in figure 4 both have ports, see fig. 11A.

Regarding claim 10, the source router and destination router in figure 4 both have data channels for receiving and transmitting data packets.

Regarding claim 11, the source router and destination router in figure 4 both have data channels or lanes for receiving and transmitting data packets.

Regarding claim 12, the source router and destination router in figure 4 both have groups of data channels or lanes for receiving and transmitting data packets.

Regarding claim 13, the interconnection network in figure 4 is a fabric of an Internet router, see page 1-line 11.

Regarding claim 14, the interconnection network in figure 4 is capable of being modified to a vertex, symmetric, direct fabric.

Regarding claim 15, the interconnection network in figure 4 is capable of being modified to a Gamma graph fabric.

Regarding claim 16, the interconnection network in figure 4 is a multi-application switch router.

Regarding claim 17, the interconnection network in figure 4 is capable of being modified to a vertex, symmetric, direct fabric.

Regarding claim 18, the interconnection network in figure 4 is capable to be modified to a Gamma graph fabric.

Regarding claim 40, this claim has similar limitations as claim 1. Therefore, it is rejected under Dally for the same reasons set forth in the rejection of claim 1.

Regarding claim 41, a fabric router used in figure 4 comprises a plurality of buffers for implementing inputting and outputting the packet toward destination.

Regarding claim 42, each router in figure 1 comprises memory-fig. 11B for implementing set of queues for incoming and outgoing data packet, wherein zero credit is applied to the queue for non arriving packet, see page 22-line 6 to page 23-line 27.

Regarding claim 52, this claim has similar limitations as claims 1-3. Therefore, it is rejected under Dally for the same reasons set forth in the rejection of claims 1-3.

***Allowable Subject Matter***

4. Claims 19-27, and 47-51 are allowed.
5. Claims 28-39 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
6. Claims 4-8, and 43-46 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dally et al.(US 4,933,933); Cypher et al.(US 5,444,701); Birrittella et al. (5,583,990) are cited to show a system and method for implementing source based and egress based virtual networks in an interconnection network, which is considered pertinent to the claimed invention.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Ho whose telephone number is (571) 272-3147. The examiner can normally be reached on Monday through Friday from 7:00 am to 3:30 pm.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155.

Art Unit: 2665

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner



Duc Ho

10-22-04